DIANNA KILBURN: All right, thank you very much. Jean, this is Dianna Kilburn. Can you hear me okay, Jean?

JEAN MESCHER: Yes. Good morning, everyone.

GROUP: Good morning. Morning.

KILBURN: We're passing around a sign-in sheet, but we'll have everyone go around and introduce themselves. That way you'll… may recognize who's speaking as we have our discussion. I guess we'll just…

TIM KRESSE: Tim Kresse. I'm a Water Quality Specialist with the U.S. Geological Survey in Little Rock.

MESCHER: Could you say it again, Tim?

KRESSE: Tim Kresse, with a K… K-r-e-s-s-e.

MESCHER: Okay.

KILBURN: Dianna Kilburn, ADEQ.

CURT GRISHAM: It's Curt Grisham of Northwest Arkansas. And, by the way, Ms. Mescher, I did get the letter from Smith, Cohen & Horan, handed to me this morning. Just so you know, it was given to me by the court reporter.

MESCHER: I thought you received it last

night.

GRISHAM: Well… the… apparently, your attorney also e-mailed it to the court reporter. She didn't know why she was receiving it, but she was asked to hand it to me as I was walked in the door, so…

MESCHER: Okay, so you received it last night and this morning.

GRISHAM: That's right, nice effect.

CARLOS SANCHEZ: Carlos Sanchez with EPA.

SHAWN GHOSE: Shawn Ghose. I'm the DP. I'm the Department Manager for Superfund site.

MESCHER: I'm sorry, I missed… who was before Shawn?

SANCHEZ: Carlos Sanchez. I'm Chief of the Arkansas and Texas Superfund Section.

MESCHER: Okay, thank you.

SARAH CLEM: Sara Clem of ADEQ.

MESCHER: Eric… what's your last name?

CLEM: Sarah Clem.

KILBURN: It's Sarah Clem.

MESCHER: Okay, thank you.

KILBURN: Uh-huh.

TAMMIE HYNUM: And Tammie Hynum.

GRISHAM: And if you would just introduce yourself again, Ms. Mescher, for the record.

MESCHER: Sure. Jean Mescher, McKesson Corporation.

GRISHAM: And what's your title there, please?

MESCHER: Director, Environmental Services.

GRISHAM: And may I just ask you, did you actually direct this letter from Mr. Smith to be delivered to me today?

MESCHER: I did ask him to make sure you did get a copy of it, yes.

GRISHAM: Okay.

MESCHER: And, for the record, McKesson objects to this meeting.

GRISHAM: Noted.

MESCHER: And I'd like to know under what guise Curt has called this meeting.

GRISHAM: As a member of the public.

MESCHER: Only as a general member?

GRISHAM: I gave you my answer, Jean.

KILBURN: Okay.

GRISHAM: Also, I'd like to ask, do you have anyone else listening in from your end?

MESCHER: No.

GRISHAM: And will the… this transcript that you've ordered be available to all the other participants in this meeting?

MESCHER: I'm not sure. I'll have to check with my attorney.

GRISHAM: And which attorney?

MESCHER: Don Smith.

GRISHAM: Is that a McKesson corporate attorney?

MESCHER: No.

KILBURN: Okay, Mr. Grisham, you had asked to meet with us, and we invited EPA to come in to discuss some concerns that you have. And, according to what Don Williams with EPA Region 6 through email correspondence has indicated what the agenda would be. I slightly rearranged these. The first thing I would like, with your permission, that we would discuss would be the PCP remedial goal for surface water, and then we can follow that with your concerns over the Five-Year Review. And then he had listed groundwater data, and I'm not sure if it's spring… actually the spring data. But

if that order is agreeable with you, then that's the way we'll handle things.

GRISHAM: That's fine, thank you.

KILBURN: Okay. If my understanding is correct, you have some questions as to how we… how the surface water discharge limits has been calculated for the Arkwood Spring. And they are regulated under Arkansas Regulation 2. We have had past correspondence on this with email as to where in the regs, but there's some math involved and some things, and so I've asked Sarah Clem from our Water Division to show you how those are actually calculated. And we've got a calculator and I'll have to help explain it, because it… in reading it in the regs it is confusing. We had trouble with it [...unintelligible...], so that's why we have a Water Division for them to help us understand that.

So, Sarah, if you could come up a little closer to Mr. Grisham and explain to him how this is actually calculated, I think he'll have a better understanding of it. And then we can discuss the applicability and things like that, if you have questions. Thank you.

GRISHAM: Thank you.

KILBURN: You have to jump the wire.

CLEM: Okay, so, here's the Reg 2. And this is… I've got our most recent…

GRISHAM: Okay.

CLEM: This is the… if you have… oh, good. Let's just use yours.

GRISHAM: Mine's not complete. I just…

CLEM: You have the 2.508 in there…

GRISHAM: Yeah… I don't…

CLEM: Let me check and I'll just use yours.

GRISHAM: It's not all the pages, but…

CLEM: Let's see.

GRISHAM: But I can see relevance.

CLEM: And yours is color, that's good. So this is… yeah, okay. This is the Toxic Section… Toxic Substances Section, 2.508.

GRISHAM: Uh-huh, and this is the letter.

CLEM: Okay, that's the letter from 1998, uh-huh. So this is a calculation that is used here. So there is the acute value and the chronic value. Now, the acute value represents a concentration that would… they're typically higher

concentrations. And this counts as an acute effect to aquatic life. So this typically happens within like a 24-hour period, so it's a very short timeframe. And so in order to get… and typically it's a lethal effect, so meaning it just… it kills organisms. And this would be the most sensitive organism. So, typically… typically, that is invertebrates, so kind of insects, aquatic insects, you could say.

GRISHAM: Okay.

CLEM: That might be the best way. So it would be… the invertebrates are typically the most sensitive. Sometimes fish are most sensitive. So that's the acute effect, short timeframe.

So then you look a chronic effect. So, typically, that's a lower concentration of a contaminant that causes that kind of effect, and so it's a more long-term… when an organism is exposed to… on a long-term basis to a concentration of a contaminant this value will say, 'At X then you get...' a chronic effect. And, typically, that is more like… you don't… it's not a killing or a lethal effect. It's more like it affects

reproduction. So it won't kill you, but it's going to have… you won't have… you won't produce as many babies, that type of thing. Or, typically, the end point with fish is not babies but you don't grow as much as someone… as an organism that wasn't exposed to that concentration. Does that make sense?

GRISHAM: Yes.

CLEM: Okay. So… so pentachlorophenol is what we're talking about. And this our… in our Reg 2. And so that's what… this is what… this is what we use. And it comes from EPA.

Now, we can have… in this state, you can adopt EPA's criteria, or you can a more stringent criteria. We've chosen to adopt EPA's criteria here. And, obviously, that's what we've done with the Reg 2. Let's put that up here.

GRISHAM: Quick question there, please.

CLEM: Uh-huh.

GRISHAM: Can you tell me where in the EPA Regulations that formula is derived?

CLEM: It would be in the Aquatic Life Criteria.

GRISHAM: Okay. Okay, I'll… I'll look it up.

CLEM: I should have gotten that… I should have gotten that water address for you, or something like that, but…

GRISHAM: That's all right. It's good to know that that's where it comes from.

CLEM: But if you, for example, Google 'Aquatic Life Criteria,' you could… and pentachlorophenol, it should come up.

So in the calculations, I've got those here, and you see the pH here… that's pH, and so it's the acidity or alkalinity of the water, acid or base. That's what the pH is.

GRISHAM: Sorry to keep interrupting…

CLEM: No, that's okay.

GRISHAM: I just wanted to go to this… I had in my copy of the regs, there was a definition of terms, and so this is what I was focusing on. I didn't mean to cut you off, your explanation, because I'm sure the layperson's explanation… but this…

CLEM: That's what I was going to say, but…

GRISHAM: Okay, but in the terms that I… I'm not a scientist. I'm not attorney. So the negative

logarithm of the effective hydrogen ion concentration in gram equivalents per liter, so…

CLEM: That's it.

GRISHAM: Of course, I don't understand that. So now if you would continue with the layperson's… I'm sorry, I…

CLEM: So it's like an acid… an acid or base. Vinegar is… is an weak acid. If you have a pool, then you'd use probably acid in… to try to manipulate your pH in your pool and things like this. So… but the pH of water and in our regulation, most waters are from 6 to 9, and that's where aquatic life exists. If it's above or below that, they tend not to exist, or exist as well.

GRISHAM: Okay, it just… I'm sorry, again, just when these come up, just pointing out that in the January 30, 1998 letter from Masoud Arjmandi, Engineer to Superfund Branch of the State of Arkansas, Department of Pollution Control and Ecology Hazardous Waste Division, which is now known as Arkansas Department of Environmental Quality, ADEQ, in this letter addressed to Jean Mescher, Project Coordinator, Director,

Environmental Services, McKesson Corporation, 1 Post Street, San Francisco, CA, 94104, referencing New Cricket Spring, Arkwood Superfund site, Omaha, Arkansas: 'Dear Ms. Mescher: Based on pH of 7.38 for the nearest station to the New Cricket Spring (Station WHI67), the State Water Quality Standards for pentachlorophenol (PCP) at the point of discharge are as follows: (1) monthly average, 9.3…

CLEM: That's a microgram.

GRISHAM: …micrograms per liter…' and that equates to parts per billion, is that correct?

CLEM: That's right.

GRISHAM: '(2) Daily Maximum, 18.7 micrograms per liter…' which is to say 18.7 parts per billion. 'Moreover, pH values of the treated water of the New Cricket Spring shall not be below 6.0 or above 9.0. If you have any questions, please call me at (501) 682-0852. Sincerely, Masoud Arjmandi'

Sorry to interrupt with that. And that was copied to Mike Bates, Chief, at that time, of HWD, that would be Hazardous Waste Division; Jean Koneger, Superfund Branch Manager, HWD; Ken Shaw,

Engineer/Supervisor, Superfund Branch (HWD); Moe Shoffey, Engineer to MPDES Branch, WD, Water Division, I think; Cynthia J. Kaleri, Project Manager, EPA Region 6 (6SF-LP).

I just want to get that in the record. Sorry to slow things down like that, but this is the centerpiece of, I think, what we're here for… what I'm here for today.

So if you'd continue about the pH, and just pointing out, if I may, the sentence of requiring that… just what you said, that the water coming out of that spring… I guess, as it enters the receiving waters, is that the correct term?

CLEM: Waters of the state.

GRISHAM: The waters of the state be between those numbers, 6 and 9…

CLEM: That's correct.

GRISHAM: …because that's as you said, where aquatic life lives and thrives, so…

CLEM: Yes. Uh-huh. So the calculation here is we would use the most… we would use the most stringent criteria, which as, you know, I just explained would be the chronic. We would want the

aquatic life to live… We wouldn't want them to approach… we want the water to approach an acute criteria, which would be lethal. We would want to… we would want to make sure that it would at least be approaching that chronic, where you wouldn't be affecting reproduction growth of the aquatic life. So that's the number I'm going to use to show you the calculation.

And here… I should have brought my little book. But here, using the 7.84… and, again, you could put in the 7.38, but if you're looking… and this was a… a water quality station that was close… it's close by, and I can show you on a map, if you'd like, the station that we're… that I pulled this from, but we just looked at the data from 2004 to 2009 and averaged that. And it was about 7.84, and that's typical for that part of that state.

GRISHAM: Was that using this… this station here?

CLEM: No, that 7-point… that's 1…6… That's Station 67. That was used… it was averaged for that… for the time when they took the average pH in 1998.

GRISHAM: Okay.

CLEM: I mean, I could use that, if you want.

GRISHAM: No, but the… no, for the purpose of demonstrating how the calculation works… so you get different numbers because it's a different pH.

CLEM: Yeah. Well, no, the… Well, here, so the acute… and so we used… so that was used… see here for the acute, you use a 4.869. And for the chronic, we have a different value that's using the… used there. But, I mean, that's the only… that's the only difference, and that takes into consideration the effect…

GRISHAM: Okay. Well, but when you plug in the value, either 7.38 or in the case of your demonstration 7.84 into these… this variable here of pH, and that's going to change the…

CLEM: The criteria value.

GRISHAM: …the hard value that you get out of that formula.

CLEM: True. Yeah.

GRISHAM: Okay.

CLEM: So you wouldn't want to… so the way we would look at it, you wouldn't want to… you

wouldn't want… to not get a lethal effect you wouldn't go over that value that's produced from this. And in order not to produce an effect in the aquatic life that would affect reproduction or growth, you wouldn't want to exceed this number.

GRISHAM: Okay.

CLEM: Does that make sense?

GRISHAM: It does make sense.

CLEM: Okay.

GRISHAM: So and…

CLEM: Am I not answering your question?

GRISHAM: No, I'm just… I want to break this down piece by piece, because I won't remember it… after we've moved past it.

CLEM: Oh, okay.

GRISHAM: So in the Regulation 2, all water bodies aquatic life criteria for pentachlorophenol, acute values, the formula, equates to daily maximum in the letter from the engineer, Arjmandi?

CLEM: No.

GRISHAM: Oh. Can you explain to me how we get from here to here then?

CLEM: Okay. What we have here is a… this is

different from a straight calculation. And I hope I'm able to explain this to you. I'm thinking I might not be able to explain it to you without a permit engineer, because that's how this was done, but… so in calculating a monthly average versus a daily maximum, this is… this was… this is done in the context of a permitting-type process. So let me explain that. So we have Regulation Number 2. Now, there's a permitting system. It's called National Pollution Discharge Elimination System, and its present throughout the whole United States, but here in Arkansas it's called the MPDS… it's called MPDS Permit, and discharges into the water of the state are required to obtain a permit.

Now, in this case, my understanding is… and this was done in 1998. In this case, my understanding was that the… Haz Waste took the lead on the project and consulted with us in the Water Division. I wasn't here at the time. They consulted with us in the Water Division in order to obtain the most appropriate numbers to be placed in the appropriate documentation for Haz Waste. And when they did that, they calculated within the

process for giving a permit. All permits are based on the regulations in Reg 2. So in the permitting process you consider the flow of the stream, meaning consider the amount of water coming down… coming… the volume of water going through the stream. And this is up… and this is used in calculating a permit limit. And there's a more detailed process than what I'm saying. I'm putting this in more of a layman's terms. And this is what… there are certain factors that are used in calculating those limitations, and also using… they have… and also used in here is the criteria value that I'm was just… that I'm talking to you about. Okay? And this value is used, the chronic value is used in calculating the permit limitation, because this is the most protected. So this is the one that we would… that we're going to be using in a permit scenario. And that's the way these were calculated.

So there's certain factors used in calculating… in developing the monthly average and the daily maximum. This would protect some type of more acute effect. And when I say that, I'm not

saying acute value, because this calculation was used. But it would be protective of some type of… it's just a… it's just a conservative… essentially, it's just a conservative approach of… of… of… a conservative… a conservative way of not approaching any type of a acute value.

GRISHAM: Okay.

CLEM: Does that make sense?

GRISHAM: It does. Can… is it fair to say then that these values here in Mr. Arjmandi's letter are not directly derived from these formulas here that we're looking at that are in Regulation 2? On the only page in the 100-page document, which is Regulation 2 that even mentions pentachlorophenol… I mean, is it fair to say to that it's not a direct… these numbers were not directly derived by performing these calculations… plugging in this number into this calculation and coming up with these numbers? Is that…

CLEM: No. These… the criteria formula were used in deriving that number.

GRISHAM: Okay, so then if you plug in this number in the parenthesis here, you'll get to that

and that?

CLEM: No, you will not, because of the other… because of the permitting… I'm going to say the permitting process that is… that is used when developing a permit limitation, which that's what these values are. It's not the direct number.

GRISHAM: I'm sorry…

CLEM: It's okay.

GRISHAM: …I just want… it…

CLEM: It's confusing. Trust me, I know. And I may not be explaining it correctly.

GRISHAM: No, you're doing fine.

CLEM: I mean, as well as I could.

GRISHAM: You're doing fine. I… in fact, it explains a lot to me. These formulae here on the Regulation 2 pages I'm looking at, again, the only place in the entire regulation that makes mention of pentachlorophenol at all is aquatic life. There is no human health criteria in Regulation 2. It's only for aquatic life. And these formulae that we're looking here… looking at here for acute values and chronic values were not the only… that's… it wasn't just the formulae in Regulation 2

that were used to arrive at these numbers that set the standard for New Cricket Spring in Mr. Arjmandi's letter. There were other considerations given in what you're calling the permitting process, even though no permit was issued, I don't believe, for…

CLEM: That's true… that's true, no perm… no MPDPS permit was issued.

GRISHAM: But the MPDPS process was used to arrive at these numbers in Mr. Arjmandi's letter that's… that are now the de facto Arkansas water quality standards and the remedial goal for New Cricket Spring at the Arkwood.

CLEM: They are not standards.

GRISHAM: They're not…

CLEM: They're not the specific standards for… they're not the specific standards for the creek.

GRISHAM: Okay, for the New Cricket Spring?

CLEM: Yeah. They're not the specific… they're not the specific standards.

GRISHAM: Okay.

CLEM: Let me put it you this way. Let me put it to you this way.

GRISHAM: Good to know.

CLEM: I think… I think what my… what we might be having is my… when you say standards to me, that means something… that means something different to me.

GRISHAM: I think I can hop right over here to the Five-Year Reviews, actually for that, because the attachment in the Five-Year Review…

CLEM: That… can I… I just want to say one thing. That… and this what I was going to try to explain it. The process… MPDS process that I was talking about and the calculation is used in, is still protective… it has to be and is protective of the waters of the state by using the criteria.

GRISHAM: Okay.

CLEM: It's… this number is not… this number is not excessive or does it ever exceed the criteria.

GRISHAM: I guess my question is it legally binding, though? I mean, Regulation 2 is the law, correct?

CLEM: Sure.

GRISHAM: So this letter is not the law… and

you… I think you just said, and I'm not trying to derail you, I promise. I'm really just trying to understand. And I think it's… there's a public good issue at stake here.

CLEM: Okay.

GRISHAM: But right here in the draft for the Five-Year Review of Attachment 1: Arkansas Water Quality Standards Calculations. And behind that, Mr. Ghose has placed this letter from Mr. Arjmandi with these values. And these values of… while… I mean, what I'm taking from this is that there were other factors besides the law, Regulation 2, taken into consideration in this permitting process that were used to arrive at these numbers in this letter. It wasn't just the formulae that we're staring at here on this page. Other… other factors were taken into effect, because if you did just plug this number with this equation, you wouldn't come up with those. In fact, these are acute and chronic and we've got monthly and daily here. So it's… it's not a direct one-for-one, is what I'm trying to… all along, I've been trying to understand how did we get to here? And you've

explained it. It's a permitting process. It was treated as… as I'm understanding, as if the plant were still in operation and wastewater, contaminated wastewater were flowing out into an Arkansas water body from an ongoing operation that needed to be permitted for that discharge. I mean, you're using a discharge permitting process on a tiny spring that's off location of a Superfund site and yet these numbers are held to very rigorously. So it's a very important point, I think, for the ultimate goal of completing the clean-up of the groundwater, the only remaining task at the Arkwood site, as far as I know. And that spring is not even on the Arkwood site. It's off the site, but assuming that it… it's… I don't know, the average for last year was 13 parts per billion--that's 'b' as in boy--is still a risk to invertebrates in the spring, at the mouth of the spring. And that, in fact, is coming from the Arkwood site, even though the spring is not on the Arkwood site. These are the de facto water quality standards, because it's right here under a page that says, 'Arkansas Water Quality Standards Calculations for the Arkwood

Superfund site.’ So however those numbers are arrived at, that’s what has been guiding the EPA and… as far as I know, once the spring is testing regularly, I guess below the most stringent of these two numbers, then ADEQ could consider declaring that spring is cleaned up, so that EPA could move on with closing out this Superfund site and deleting it from the National Priorities List, which is the goal.

CLEM: I don’t know. I can’t answer that question.

GRISHAM: Well…

CLEM: But I did want to say…

GRISHAM: …but this is the water quality standard, though. This letter…

CLEM: Those numbers… these numbers are protective of the water quality standard that’s in Reg 2, this right here.

GRISHAM: And Arkansas is not going to tell the EPA that it’s… the spring is remediated until you hit below these numbers on some kind of regular basis, in fact, below the lowest number, 9.3, is that right?

CLEM: I can't answer that question. I can't.

GRISHAM: Okay.

MESCHER: Curt, I need to interject for a second here. We inject clean water up at the site, so those levels are not indicative of the spring concentration.

GRISHAM: I thought you were just going to be listening in, Jean.

MESCHER: I wasn't told that. Is that my… am I just listening in? Is that correct?

GRISHAM: Yes.

KILBURN: I think the nature of her comment which was just to hopefully help clarify for you what was in this chart.

GRISHAM: Well, okay, could you repeat your comment then, please?

MESCHER: Pardon? I didn't hear that.

GRISHAM: Could you repeat your comment? You're injecting clean water so that's affecting the results you're getting at the mouth of New Cricket Spring, is that what you're saying, Jean.

MESCHER: That is correct.

GRISHAM: Okay, so is it lowering or raising

the concentration as tested by your contractor at New Cricket Spring?

MESCHER: Well, we haven't turned off the injection system for several years now, but we inject clean water up on the site and we are… we have discussed with the ADEQ about turning off the injection system and testing the springs under national conditions.

GRISHAM: I think that's an excellent idea. How soon can that be made to happen?

MESCHER: We're discussing it at this time.

GRISHAM: Okay. I think it would be important since going back through the data, there's… it's not clear that when you installed the pilot injection system that it made a difference to the testing levels at the mouth of New Cricket Spring.

Also, since you are now a participant in this meeting, Jean, and not just an observer, may I ask you the building that was constructed by McKesson Corporation's contractors at the mouth of New Cricket Spring, does that contain wood treated with pentachlorophenol?

MESCHER: I don't have that information right

now.

GRISHAM: You don't know.

KILBURN: No. Let's try to stick to the agenda as set out, please.

Okay, Sarah, you were explaining to Mr. Grisham how we calculated the numbers.

CLEM: Uh-huh.

KILBURN: And I think it may help, Mr. Grisham, to state that under… under the Superfund process, they are required to consider as… I can't remember… I just know their acronym. I can't remember what all it is, but all other appropriate regulations that may apply to the site, which is how Regulation 2 is applied to this particular site. And part of reducing the burden is that they do not have to obtain a permit, like a permit application with a permit number, as would… as you so stated in an operating facility that's discharging wastewaters. That is accurate what you're saying. But they must meet permit-like conditions. So at the time that those numbers were calculated, then, that was the basis for that.

And some other issues we may cover under your

concerns with some of the report, itself, but just a heads up on that. ADEQ has submitted comments on the report to EPA, but we have not finalized… we haven't had a chance to have discussions with EPA on those. So once the document is finalized then you may find that some of your concerns may or may not be addressed and then it may… we may have to have discussions on those at that time.

GRISHAM: Okay. Well, we can move on.

KILBURN: Okay, so just… just to keep that in mind, okay?

GRISHAM: That's fine.

KILBURN: Since that's a draft document. It hasn't been finalized.

GRISHAM: I appreciate it. I appreciate your…

KILBURN: Okay.

GRISHAM: We don't have to stay on this any longer.

KILBURN: No. That's fine. I want to make sure you understand.

GRISHAM: Yeah… well, I don't think I can understand it, because it's not just the formula that was in Regulation 2 that was used to arrive at

these numbers. Is that a fair statement?

KILBURN: Uh-huh.

GRISHAM: Okay, so we can at least agree to that.

KILBURN: Unless you… do you want to explain to him where those…? I mean, it's in the, what, the…?

CLEM: It's in the CPP. It's called a Continuous Planning Process. So it's Continuous Planning Process, okay. And what that does… we have our… we have our Reg, but implementing the MPDS Permitting System we have to have this, essentially. And other states call it different things. We have… we call this CPP. But it's the… it's… it's… they are… they're calculations that are supported by the [...unintelligible...] Federal Regulations, essentially that we have to use in all the calculations that are used in developing these numbers are contained in that.

GRISHAM: And that's a document I can look up or get through Freedom of Information…?

CLEM: Absolutely. Absolutely, yeah. Yeah.

GRISHAM: Okay, we can leave it at that. I

appreciate your effort.

CLEM: I apologize for not…

GRISHAM: No, that… it clears it up for me. I now understand why when I do this calculation with this pH value, I do not get those numbers.

CLEM: No, you don't.

GRISHAM: Now I understand. That answers the question. Thank you very much. I appreciate it. I'm sorry for all the interruptions.

KILBURN: Okay. Hopefully, that helped you understand it a little better?

GRISHAM: It does.

KILBURN: Okay.

GRISHAM: Thank you for that.

KILBURN: And I think you can get to the CPP from our web page, I think?

CLEM: I'm not current on the revision process with our CPP, so we're still working under the old one, but these regulations have not changed at all.

GRISHAM: All right.

KILBURN: Thank you, Sarah.

GRISHAM: Thank you, Sarah.

KILBURN: Okay, the next issue then is the

Five-Year Review. Like I've already mentioned, ADEQ has issued comments on that report to EPA, but we have not had a time where we can discuss those with EPA. What I would like for us to discuss here today are your concerns with the Five-Year Review.

GRISHAM: Okay.

KILBURN: And we'll answer those as we can, understanding the Five-Year Review is a requirement of EPA under the NCP, National Contingency Plan, and… so they are the lead on the Five-Year Review. ADEQ is an assistant mode for this process.

GHOSE: The Five-Year Review is a statute [...unintelligible...]…

KILBURN: Yes.

GHOSE: …for any waste left, which is not residential standard…

KILBURN: Right. That prohibits… that possibly restricts use.

MAN: [...unintelligible...].

KILBURN: Okay.

GRISHAM: So and… well, if I may, just at that point, clear up I think one misperception that's encoded. It's carried forward in the third Five-

Year Review, which is that the institutional control has some defect and it doesn't. It was the… the deed restriction, which is the institutional control was specified. In fact, it was drafted Don Williams, himself, and that's exactly what got recorded. And Don Williams has said, it is recorded to his satisfaction, to EPA's satisfaction, and there are no corrections that need to be made to it. So in the third Five-Year Review, you've written that… under Deficiencies, the one deficiency that you point out is that the corrections need to be made to the legal description. That's not the case, and…

GHOSE: Meets & Bounds [?] restriction.

GRISHAM: No, sir.

GHOSE: There are mistakes there.

GRISHAM: No, sir.

GHOSE: Well, this is…

GRISHAM: Let's get Mr. Williams on the phone, so… because that needs to be cleared up right now.

KILBURN: I'm sorry.

GHOSE: What date… I have the records as of August 30th, and that's the one that has mistakes in

the Meets & Bounds.

GRISHAM: I'm the one that pointed out to you that there were some typographical errors when the…

GHOSE: But those…

GRISHAM: Those have been corrected.

GHOSE: You've got it.

GRISHAM: They have been…? I can play a message for you from Don Williams on my phone saying, 'Tell your father he does not need to do anything else to correct the title. It is correct.'

GHOSE: What is… what was this corrected in the Meets & Bounds, because I have the copies of Meets & Bounds as of August 30th, when it was entered into the…

GRISHAM: The description isn't even in Meets & Bounds, sir. It's the legal description.

GHOSE: The description, Meets & Bounds is a legal way of describing a property.

GRISHAM: Not… it's not the only legal way of describing a property.

GHOSE: Oh, well, you might use whatever it is, but under the EPA's definition…

GRISHAM: Excuse me, Mr. Williams has said there is no deficiency in the institutional control as recorded. And if there… and that needs to come out of the third Five-Year Review that it's not a deficiency. And Mr. Williams has definitely stated that the owner should not do anything further, record nothing further by the way of deed restrictions for institutional control on the Arkwood site. 'Do not do anything further.' Don Williams, I mean, did… again, can we call him and have him verify…

HYMAN: I talked with Don last night. And, unfortunately, he's going to call in or try to tie in if he gets cleared up, but he has had a scheduling conflict and, unfortunately, he's not available by phone today.

GRISHAM: Well, that's fine.

HYMAN: So I wanted to clear that up with you…

The second thing that I wanted to make sure that we're clear on is, you know, you having concerns with some of the comments that you're seeing in the draft Five-Year Review. Those are valid concerns. And so they are addressed, whether

it's a agreed or disagreed situation or not, I want to make sure that, you know, we'll talk about it today. That's why we're here. But make sure you also understand you need to address your comments in writing to EPA and cc the state. That is the official venue for them being able to respond back to your comments.

GRISHAM: Okay, so…

HYMAN: Okay, so I want you to realize that for your protection. We can talk today verbally and try to address, you know, any concerns you've got, but you need to address your concerns in writing.

GRISHAM: And does it have to be on this form right here?

HYMAN: You can do an attachment to that form, correct Carlos?

SANCHEZ: Yeah.

HYMAN: But you need comments back in writing, correct?

SANCHEZ: Yeah.

GRISHAM: And not just an email. I mean, you want a formal letter…

SANCHEZ: An email would be sufficient, okay. I mean, we're using the electronic correspondence now as official documentation for, you know, comments and things of that nature, so an email would be sufficient.

GRISHAM: Okay. So this doesn't even have to be on the cover of it? I can just…

SANCHEZ: Just reference the comment you have regarding the third Five-Year Review for the Arkwood site, and specifically what those comments were in order that… in the area that needs to be either corrected or we have an issue with.

GRISHAM: Okay. All right, thank you for that.

KILBURN: Okay. Yeah, so we can… We'll be happen to listen to any concerns you have. Again, as Tammie, I said, you really need to follow-up in writing to be sure that the issues can be resolved at some point. Okay?

GRISHAM: Okay.

SANCHEZ: And, you know, a point of clarification for… the deed restrictions only apply to areas where contaminants were left or they're

still above base levels. So the deed restrictions are not for the whole site. They only pertain to the area where work or [...unintelligible...] is that has restrictions or the requirements for legal [...unintelligible...] that can take like that.

GRISHAM: Okay. Well, if that's the case, then we will have to revise, and we will have to revise and we'll need EPA's permission to record a new deed restriction, because the owner gave a deed restriction encumbering the entire site, so we want to narrow that then.

SANCHEZ: And that's the correct way or the only area the district has the restrictions on, only the area that has a… there's a cap where contaminants still remain thereabouts are restricted land use. So there may be… I don't know if that's really the issue or not, but even if it's not, if the real restrictions are for the whole site, that's not correct either, because it only applies to the areas where waste remains in place.

GHOSE: Exactly. Well, remediation actually took place, on the capped area.

GRISHAM: Any of the flat area that's bare,

where there was actual factory work done or when… Not even that much.

SANCHEZ: No, where…

GRISHAM: Just where the PCP was.

SANCHEZ: Where, again, contamination remains above failsafe levels, but wherever that is that's… that's where the restriction applies to.

GRISHAM: Do you have a definition of that area in your analysis so you could tell that here's…

SANCHEZ: Well…

GRISHAM: …here's the boundary of…

SANCHEZ: …that information should have been included as part of the Remedial Action Report. The Remedial Action Report should document or specify areas that we'll clean up and what those levels remain, or the area where the cap was placed that would tell you where the restrictions or… you know, apply for the site.

GRISHAM: That would be in the record of decision?

SANCHEZ: In the Remedial Action Report. The Remedial Action Report is a one document for, you

know, clean up, was conducted or what activities were done for the site.

GRISHAM: Okay.

SANCHEZ: So it's called a Remedial Action Report.

GRISHAM: And it has a legal description of the Meets & Bounds of the area that's…

SANCHEZ: Well, it should have been a survey at the time that the clean up was completed, so that the restrictions would apply only to those areas.

GRISHAM: Thank you for that. And so would EPA agree to allow the owner to modify the institutional control to narrow it down in size to only the area where residual contamination exists in the soil?

SANCHEZ: Yeah, exactly.

GRISHAM: Okay, thank you. I'm sorry I misunderstood.

SANCHEZ: Yeah.

GRISHAM: So the… there is unacceptable levels of residual PCP in the soil, even after the soil remediation has been performed?

SANCHEZ: If it was only clean-up to residential areas it would still require a restriction, because the only area where we have no restrictions is those areas that have unlimited use. An example is where you can build a residential property, basically. That's when the area that we call 'unrestricted use.' So in areas that may not have a cap, but they were only clean up to resident… I mean, industrial levels, it would still have a restriction there to prevent somebody from building a house in those areas, even if it was escalated, but the remaining levels are still above unrestricted land use. That's the definition in the… in Superfund.

GRISHAM: So, Carlos, you understand that the deed restriction that the owner did record includes a much larger area than that, including a Wooded Hillside that was never part of the factory operations.

SANCHEZ: Exactly. Exactly.

GRISHAM: So that can be taken out of the institutional control.

SANCHEZ: Yeah. Yeah.

GRISHAM: That’s good news.

SANCHEZ: Actually, we… EPA has designed deed restriction… I mean not deed risk restriction… the boundaries because [...unintelligible...] and it’s closed… it shows on the aerial map which part was remediated. That’s it.

GRISHAM: Well, the aerial map didn’t contain any kind of legal description. It was just an outline of an aerial… on an aerial.

GHOSE: But that came from the legal description that we received from McKesson, and we had it plotted, and it plotted exactly.

GRISHAM: Well, if you’re talking about the deed restriction that was prepared by Jean Mescher of McKesson Corporation…?

GHOSE: Yeah, but I think I’m talking about… I asked for the survey, actual survey of the site.

GRISHAM: But you had that in your possession, because you… you supplied that to the owner, that you had the survey with that legal description in your possession. You delivered that to me not two months ago. That survey…

GHOSE: Oh, the one that you guys got?

Actually, what happened is I told them, 'Here it is. Just photocopy this and send it to them.' But, no, they wanted it to be entered in electronic form, and while it was being entered, somebody made some goof in the… in Meets & Bounds. I plan to take that… one that has been recorded, it doesn't close.

GRISHAM: Okay, we can take this offline as well. Those… That legal description was taken from that survey and when Mr. Williams was working to get an acceptable deed restriction drafted, very different from the one that Jean Mescher wrote to the owners of the land saying they had to record her version, which included onerous controls that were… onerous… burdensome duties of the owner to perform testing and… which sought to restrict the use of all the area basically forever. And I have Ms. Mescher's statements in writing right here in front of me, where she said repeatedly that… one quote is, 'Possibly hundreds of years that the site will not be used.' And at the same time that she's writing to the owner with what the owner felt was a lowball offer to purchase the site and the same… and the same… she's claiming it'll never be used.

KILBURN: Okay, Mr. Grisham, here, let's keep it… get back on track again here. I think…

GRISHAM: Well, I think it's important.

KILBURN: Well, but use and reuse is not on the agenda. And I think we're kind of veering off towards that, okay?

GRISHAM: Okay. The point I was trying to make is that I don't understand why Jean Mescher isn't for working to close out the site as quickly as possible.

KILBURN: Well, I don't… I don't think we can suppose what her opinions are…

GRISHAM: And I think it has to do with…

KILBURN: … opinions are at this point to know.

GRISHAM: Well, can you speak to that, Jean? Why… why…

KILBURN: No. No, I'm sorry that's not on the agenda. That veers off into use and reuse, and this is not the forum for that, okay?

GRISHAM: No, we could have another meeting at another time.

KILBURN: Well, we will see. We will

determine that. EPA set up the agenda and Mr. Williams was very explicit that that would not be on the agenda.

GRISHAM: Okay.

KILBURN: And I understand there are… it does dovetail off of the Five-Year Review, I understand that. The Five-Year Review is not…

GRISHAM: Well, let's go back to the Five-Year…

KILBURN: It is not final yet. So I don't want to get too far off track, okay?

GRISHAM: All right, sorry.

KILBURN: Okay.

GRISHAM: The Five-Year Review…

KILBURN: I think you and Mr. Ghose have a better understanding of a need for correction in Meets & Bounds and how those…

GRISHAM: That's very…

KILBURN: …those errors have occurred, and I think the EPA and your father were here taking care of the filing, will be able to resolve that. Okay?

GRISHAM: Okay, thank you. That's news to me that the institutional control in the deed

restriction can be much reduced to a much smaller area.

GHOSE: The deed restriction is for industrial use only, it says.

GRISHAM: Right, but only for the area that still has some residual contamination in the soil.

GHOSE: Yes, right. The area that was remediated means the capped area.

KILBURN: Right. And, as you have said, Carlos, anything that… was… only still exists at industrial levels.

SANCHEZ: That's correct. Yes.

KILBURN: Right? Right, okay. All right.

GHOSE: And it is clear… it clearly says that. I don't know where you get that there's a… we don't have a [...unintelligible...].

WOMAN: So, Carlos, is it fair to say it's an action item that EPA can provide Mr. Grisham with a copy or a new something that states, 'These are the areas that need to be addressed and the institutional control,' and then they could work on the amendments?

SANCHEZ: Yes.

WOMAN: Okay, very good.

SANCHEZ: Well, we can, you know, go back and check the Remedial Action Report and check and see, you know, where the clean up was conducted and then what levels remain that will require the restriction to apply to those specific areas, and that way you can narrow the area where the restriction would apply.

GRISHAM: Okay. So then EPA will give the owner permission to modify. Because now the way that the deed restriction is recorded, it can only be modified with EPA's permission, and it includes a much larger area. And that was derived at by the… it's just the legal description copied off the survey that was provided by EPA. So that's where that legal description… so that's a commitment from EPA that we'll be able to narrow that down, because it includes a wooded hillside… that, if I understand correctly, then the non-capped area, the non-fenced area can be used for residential use in the future. It's not part of the Superfund site.

SANCHEZ: Exactly.

GRISHAM: Okay.

SANCHEZ: And we'll take a quick look to see if some… a few samples were collected back when the initial investigation were being conducted to verify that, but generally you know, when you… when we put a site on the Superfund list, we would generally look at the whole, you know, property boundary, and then narrow that down after we conducted our remedial investigation to see where actual processes took place or where actual contamination was located. And, you know, even in the wooded area that doesn't seem like anything happening, you know, it still might have occurred at one time. That may change the situation, but generally you know, we… from the remedial investigation, we narrow the area where the clean-up is, you know, as the part to be conducted.

GRISHAM: Thank you for that. And that's an action item that we can take offline. It's a commitment from EPA.

Before we go into this, and this should be pretty brief, just on the water, I wanted to ask one last question about water at New Cricket Spring. And I've asked this before. I think Ms.

Kuscher tried to address it with the… but what is the scenario that would be acceptable under whatever Arkansas Water Quality standards are in operation here? Would it need…? So let's say 9.7, whatever that letter was, parts per billion, 'b' as in boy. Would it have to test below 9.7 every single time it's tested? Is that… It's only tested--what?--once a month now by McKesson's contractors. And I think we're on the third or fourth different laboratory that McKesson has used the course of this water quality issue. Does it have to test below that most stringent number consistently? It can never exceed that in any sampling or is it an average?

KILBURN: It should be consistently… I'm not sure exactly how…

GHOSE: Well, there are some…

KILBURN: The remedial, yeah.

GRISHAM: Below…

WOMAN: We need to defer that until Ms. Clem is able to come back. She had to step out momentarily. She'll be right back.

GRISHAM: Okay.

WOMAN: And she can explain to you what the state [...unintelligible...] standards require them for that level.

GRISHAM: Okay.

KILBURN: And that's how that would be determined.

GRISHAM: So we'll come back to the water in a moment briefly?

WOMAN: Absolutely.

GRISHAM: Okay.

WOMAN: Absolutely.

GRISHAM: The Five-Year Review Report, then, and that's the last item, other than coming back to the water briefly from… the first Five-Year Review Report, what I'm looking at here, February 2001, the cover page says, 'Prepared by Region 6, United States Environmental Protection Agency, Dallas, Texas.' And this is your work product, I think.

MAN: Uh-huh. Uh-huh.

GRISHAM: And then on the very first page, after the cover page, says, 'Five-Year Review, Arkwood, Inc., ARDO84930148, Boone County, Arkansas,' the very first sentence: 'This

memorandum documents EPA's approval of the Arkwood Five-Year Review Report prepared by McKesson, HBOC, Inc. on behalf of EPA.'

The second Five-Year Review Report for Arkwood, Inc. site, again, the EPA logo on the cover page, February 2006. On the cover page it says: 'Prepared by Region 6, United States Environmental Protection Agency, Dallas, Texas,' with a barcode. And the very first page behind the logo page, 'Second Five-Year Review, Arkwood, Inc,' etc. The first sentence, 'This memorandum…' it's identical… 'This memorandum documents EPA's approval of the Arkwood Second Five-Year Review Report, prepared by McKesson Corporation (McKesson) on behalf of EPA.'

Jump ahead five years. The third Five-Year Report. This is the draft for Arkwood site…for Arkwood, Inc. site. EPA logo on the front. The draft is dated March 2011. The cover page states it's Prepared by Region 6, United States Environmental Protection Agency, Dallas, Texas. The first page, behind the cover page, titled, 'Third Five-Year Review,' understanding this is a

draft for Arkwood, Inc. The first sentence: 'This memorandum documents EPA's approval of the Third Five-Year Review Report for the Arkwood, Inc. site, prepared by EPA, with data and reports provided by McKesson Corporation.

The reason I went through that laborious process is to point out that… and please correct me where I'm wrong… these five-year reviews are created by McKesson and McKesson's contractors, R2P5, for example, Oxford, and they're not actually prepared by EPA. EPA puts a cover on it and sends it through for signature.

GHOSE: Not really.

GRISHAM: Which part of this is original work to EPA that's actual analysis or testing that's undertaken…?

GHOSE: All these data and reports provided by the PRP [?], in this case McKesson, we take it, we format it and do whatever we need to do…

GRISHAM: Cut and paste it.

GHOSE: Well, whatever procedure you want to call it, it's okay, but we write the book. And the reason…

GRISHAM: So you're saying these paragraphs are your own writing? They're not lifted or cut and pasted from reports from McKesson contractors?

GHOSE: No, they're… of course, [...unintelligible...] the reports. They supply us the reports. We don't… we are not sitting there checking every day how many samples that they…

GRISHAM: Have you ever gone to the Arkwood site and checked a sample on your own? Has the EPA ever done independent verification of the water testing performed by McKesson? Any kind of checks and balances on McKesson's work there, McKesson's contractors? Have you ever looked into the qualifications of McKesson's contractors, the laboratory, MMET, Inc., for example? Is it accredited by any recognized, scientific body, to your knowledge?

GHOSE: I don't know…

GRISHAM: Do you know the contract I'm referring to… the source of the data?

GHOSE: If the data coming from… provided by the responsible body is wrong, then they're liable.

GRISHAM: But you wouldn't know if it was

right or wrong, because EPA has never performed a single, independent verification?

GHOSE: We can never… nobody can ever go ahead and repeat everything that…

GRISHAM: I didn't say everyone. I said has EPA ever performed a single, verification of the water quality testing at…?

GHOSE: From time to time we check… look at the data. They send us monthly data.

GRISHAM: Do you test the water yourself, ever?

GHOSE: No.

GRISHAM: You've never tested the water yourself.

GHOSE: That's not the procedure.

GRISHAM: So your role is strictly oversight of the responsible party's operations?

GHOSE: Yes.

GRISHAM: So you have no direct involvement with the water quality remediation? Is that true for the soil remediation, as well?

SANCHEZ: When we do confirmation sampling, what you're referring to is if for some reason we

don't believe that the [...unintelligible...] are providing, you know, accurate information or we have some question as to the information that is being provided, then we will go and do some confirmation sampling. So it is done on… for a specific reason or a specific basis if we feel that there is a need to do that. We have not noticed that at this point, but, I mean, if you, you know, have questions with the data that are been provided, any specific information or… I mean, we can follow-up on that.

GRISHAM: I have…

SANCHEZ: I mean, if you have doubts or questions on the data or…

GRISHAM: I do have doubts.

SANCHEZ: …[...unintelligible...] of the lab data that the [...unintelligible...] are using, we can go back and double-check that. But, again, it is done for a specific reason, the confirmation or follow-up sampling.

GRISHAM: Well, thank you for that. May I ask you if this would be the kind of thing that would cause you to sit up and take notice and think that

maybe there is something wrong with the contract… First of all the recent changes in contractors, MMET, Middleton Microbiology Labs of Ozark, Missouri, whatever it's called, was… I believe the data, the tester, the laboratory used by McKesson for the bulk of this… the water part of this phase, you know, according to… well, at least according to Google Maps, that's the location of MMET Lab.

SANCHEZ: Well, sometimes those maps don't actually…

GRISHAM: Okay, fair enough.

SANCHEZ: …because I've done that myself.

GRISHAM: Are you familiar with the vendor, R2P5 Environmental Remediations, Inc., incorporated in California, data filing 1/29/1997? Do you know R2P5?

SANCHEZ: I'm not familiar with…

GRISHAM: They… I think it's here in the third Five-Year Report. You're familiar with it, aren't you Mr. Ghose?

GHOSE: What?

GRISHAM: R2P5, Environmental Remediations, the contractor McKesson has used for years to

create the reports that you paste into your first, second and…

GHOSE: Are you suggesting that we send out inspectors to go and check lab work…

GRISHAM: Yes, I am suggesting. I'm suggesting that you have a… you have to perform due diligence.

KILBURN: Okay. How about… Carlos, would this be something that Mr. Grisham could, as part of the Five-Year Review, because it's noted in that and he does have concerns, for independent testing and all, could he submit that to EPA as a comment on the Five-Year Review?

SANCHEZ: Yeah.

KILBURN: And then he could detail his… where his concerns come from to give EPA what they need to check on that and to provide you an adequate response?

GRISHAM: Well, that's fine, but…

KILBURN: Would that help?

GRISHAM: I mean, this is an agenda item. It's… I'm not veering off of Five-Year Review.

KILBURN: I know. I know. I'm just trying to

see if it…

GRISHAM: I'm definitely going to follow-up with it in writing. We have… we have some action items here.

KILBURN: Right. Because I'm not sure that we can…

SANCHEZ: To answer your question, would the responsible parties change contractors, they are required to provide the qualifications of those contractors to EPA for basically agreeing to the change or not, but… and that's a requirement that the responsible parties are supposed to do.

GRISHAM: Okay, so I would like to get from you that that communication, where Jean Mescher of McKesson Corporation notified you of changing contractors from MMET Lab to… I think then it went to Continental. I think now it's on Arkansas. Now… so it's been Missouri, Kansas, now it's in… actually with an Arkansas lab, to my understanding, which actually is accredited by a scientific body. As far as I can tell, MMET which performed most of the data that went into these reports that were put together by R2P5 Environmental '96 ARK… Documents

Reviewed. Okay? This is… this happens to be the second Five –Year Review. I believe it's…

SANCHEZ: Okay.

GRISHAM: The second Five-Year Review. Documents Reviewed, 'Arkwood, Inc. Site Activity Report, July 1996 through September 1997, R2P5, Environmental Remediations, Inc.' That's a company in San Jose, California. Again, R2P5 was incorporated… I may have misspoken before. MMET is incorporated in Missouri. R2P5 Environmental Remediations of 3042 Fruitvale Avenue, San Jose, CA, which I believe happens to be also the place of residence… not the address, but the town, San Jose, California, is… McKesson employee's, Robert Ritchie's legal residence, I believe. This business entity detail from California's Secretary of State shows R2P5 Environmental Remediations, Inc., Entity Number C2000164. Date filed was 1/29/1997, right at the time that they started working on this project, coincidentally. It's in San Jose. Coincidentally, also, the residence of Robert Ritchie… I began to wonder if this cryptic thing, R2P5, if the R2 is RR, Robert Ritchie, but

maybe I'm just… you know, read too many novels. And R2P5, again, 'Documents Reviewed: '97, '98, '99, 2000, 2001, 2002, 2003 and 2004, 2005.'

This is where the bulk of the data and I believe the narrative for this document, Second Five-Year Site Review, come from. I believe it's mostly just inserted into this report. And you trust it, and you have apparently reason to trust the validity of the reports and the data that back up the reports, and you've never had any reason to question that, not… so when that vendor was changed-out recently, when the laboratory, MMET was changed-out recently, and then changed again, you're saying that EPA approved those changes, was aware of it and approved it?

SANCHEZ: We'll go back and see if that information was provided, but they are required to [...unintelligible...] those changes. And EPA, what EPA does, if we don't have any objection, we… we just make a statement that we have no objections. I don't know about approving, but we say we have no objections to the change.

GRISHAM: Okay, but it's something you would

have been aware of and… so then there's a communication here… as part of one of the reports Ms. Mescher writes that they're changing vendors. That was MMET. And they decided to find a new laboratory to do some testing because MMET's equipment was not successfully repaired. Does that… does that ring a bell? Do you remember anything about that? I can pull the letter out, if you want.

SANCHEZ: They change, you know, laboratories for whatever reason. I mean, if they can get a better price or something with another laboratory that's accredited they can do that. I mean…

GRISHAM: But I guess my point is that if they weren't able to repair their equipment would that not be a red flag that maybe that lab… there might be a problem with the lab? I mean, apparently, there was a problem with the lab.

SANCHEZ: Well, again, I don't know what specific equipment, you know, was being repaired or they had problems with. They use different equipment to test different parameters or different media like you saltwater, different temps, things

like that. So unless the equipment was related to the testing associated with this site, you know, it would not necessarily require a red flag. Plus, we were getting new data or more data, you know, recent data from the new laboratory, and it, you know, appears to be consistent with what we have received before.

GRISHAM: Okay, consistency, that's a good term. I'm glad you brought consistency up. Would inconsistency in the data be a red flag that there's possibly a reason to independently… what did you call it? The…

SANCHEZ: Confirmation sampling.

GRISHAM: Confirmation sampling, thank you.

SANCHEZ: And, again, it has to show up, you know, over… you know, it would have to be information that goes, you know, very clearly… yeah, because the site, as you are aware, I mean, you could have contaminants that are trapped in the current environment that all of a sudden for whatever reason or [...unintelligible...], you know, would, you know, give you a spike in the readings. So in the, you know, subsurface

conditions that you have in the site it would not be unusual to get a spike in the reading or a change in the reading, and, also, related to the flow in the creek. So there's other parameters that, you know, go into play when you have a spike or a… you know, a huge difference in some of the readings that you, you know, [...unintelligible...].

GRISHAM: So any spike of any magnitude wouldn't necessarily be cause for concern?

SANCHEZ: Not necessarily, no.

GRISHAM: Okay, so… and if… for example, in… on 11/3/2005, with a New Cricket Spring flow gallons per minute of 6, there was noted 278 parts per… well, actually, another deficiency… you may have already caught this, but in the draft, Third Five-Year Review is… where the data is here, no units of measure are noted. But we can assume these are parts per billion?

SANCHEZ: Parts per billion.

GRISHAM: But it's noted anywhere…

GHOSE: Anyway those are corrected. I mean, it's a long, long…

GRISHAM: Okay, so on the date that I'd specified, 11/3/2005, with a flow of 6 gallons per minute, New Cricket Spring, the reading was 278 parts per billion, 'b" as in boy. The next reading, 11/14/2005, the flow was the same, 6 gallons per minute. The reading was 15.

So I don't know what percentage that is, but that seems like a wide fluctuation. I mean, as I understand the system, there's water injected up at the site. It flows down. The water injection is used to keep the treatment plant offsite, at the mouth of New Cricket Spring, functioning properly. At least that's one of the justifications I've read for that. It should be able to control the flow. In other words, to keep water going through there, so the treatment system can operate. And yet with the exact same measurement of flow, you have wide… I think by, you know, orders of magnitude, or at least by… at a glance, 3- or 400% fluctuation in the testing. Now, I understand these are minute quantities we're talking about--63 parts per billion, 'b' as in boy; 278 parts per billion--extremely minute, and I think there's… you know,

it's also fair that as you approach a number like 9 parts per billion, there's… I mean, one thing we haven't talked about, is there any margin of error included in these testing methodology? Is there a margin of error? Is it… even if it were a 3% margin of error, that would be significant at such a low number.

So I just point that out. I'm putting that out there as what seems to me like an unexplained fluctuation, anomalous reading at exactly the same downstream. It's not explained by… I mean, you think it's just the stuff sticks and then it breaks loose?

SANCHEZ: Well, it could but the 6 gallons per minute flow, that's the… the flow in the creek. That's not what is really injected, you know, by the two wells, which, again, can be… I don't know what it was, if it was the same or not, you know, when the creek was at 6 gallons per minute, so… so, you know, that could have, you know, some effect or impact on the readings for the pentachlorophenol.

To me, the concern would be if you were… if for some reason, you know, that the readings were 5

and the… you know, [...unintelligible...] is saying, 'We're done. We're out of here.' Then you may want to get verification to justify, you know, that they are meeting the [...unintelligible...]…

GRISHAM: Right. I know.

SANCHEZ: …before we say, 'We're done with the clean-up.' Right now, we haven't, you know, reached that level, and while there might be, you know, some concerns or reasons that we can go and, again, verify, ultimately, you know, even if the clean-up is set to be completed, because contamination remains above failsafe levels we're never walking away from the site, and the [...unintelligible...] are never going to walk away from the site. And if for any reason, you know, we see the levels increase or anything changes that requires additional clean-up, they are required to come back and do clean-up.

So, I mean, I'm not sure that you have… you have, you know, valid concerns, but ultimately the potential responsible parties will always be responsible for the clean-up. So if they're, you know, fudging numbers or getting incorrect numbers,

it will show up in the long-run and they have to come and make it right.

GRISHAM: Well, that's… I understand. I appreciate that. That's if… that would be intuitive. What I'm talking about is something that is counterintuitive, which is the PRP not wanting to site to close-out, blocking every turn. Jean Mescher… I have here in writing… and this is why I needed… this is actually, I think, a valid part of this discussion, because there's evidence that at least employees of McKesson do not want this site closed down. Here's Jean Mescher on…

SANCHEZ: I don't see why…

GRISHAM: Can I just read something that I think… this is my evidence.

SANCHEZ: I don't see why a responsible party would not want a site to be…

GRISHAM: Because they want to buy it.

SANCHEZ: Well, if…

GRISHAM: They've consistently offered a low dollar amount to the owner, and in the same sentence… Can I just finish because this is very important? In the same sentence…

SANCHEZ: Well, let me continue my statement. I mean, if they're still out there, they're spending money. It is costing them money, you know, be there at the site, so I don't know what intentions they would have to not complete the clean-up and…

GRISHAM: Conflict of interest.

SANCHEZ: …and move out. I mean, it's costing them money to have, you know, all this sampling, all these analyses being done, having a consultant onboard to look at all this information and data.

GRISHAM: Yeah, it's costing shareholder money. It's costing McKesson shareholder money.

SANCHEZ: Well, it's costing the company money.

GRISHAM: But, you know, and this is just a question. If R2P5 Remediations is in some way connected to Robert Ritchie, McKesson employee, and this is… this residence here in San Jose is the address of record for that R2P5 Environmental Remediations then… I'm saying 'if'… I'm saying that I feel, personally, my opinion is there is an appearance of a conflict of interest, and… that

Jean Mescher is engaged in and her colleague Robert Ritchie, and that they would have incentive to keep this going because… they would have incentive if they were in some way connected to the vendors who are receiving the money that you're referring to.

So I don't know if that's the case. I haven't found that out, but to me it looks… it's strange. This isn't… this isn't a business. This is a residence. So R2P5 Remediations is run out of this house in San Jose, the same town where Robert Ritchie, McKesson employee, happens to live. And, again, just to illustrate why I think that this conflict might exist, here's an email from December 12th of 2005 from Jean Mescher, copied to Jay Hollander of SFRELaw.com, and Jeffrey Vines of McKesson Corporation, discussing how much they want to pay the owners of the Arkwood site, saying that the Omaha… the… quote: 'My understanding is that the property in Omaha is valued at $700 to $1,200 an acre--all caps--WITHOUT ENVIRONMENTAL IMPACTS. At the high end, the property is worth $102,456, and only $59,766 at the low end. Therefore, I felt (and explained to my management) that this was more

than fair for property that has--all caps--NO POSSIBLE USE IN THE FORESEEABLE FUTURE.'

That's the conflict of interest I'm talking about. Jean Mescher wants to buy this land from McKesson, just as McKesson has bought other land in the surrounding area and then transferred it… and I have the court records here, the tax records… transferred it to Mr. Ritchie. They… she expresses here in writing and, again, the desire to purchase the property. In the same communication declaring that it has no value. She used the term 'negative value.' You just heard, 'No possible use in the foreseeable future.'

Here in this email of December 7, 2005, Jean Mescher, same cc, Ms. Mescher says, 'I was able to get authority to increase offer to $75,000. Once again, McKesson's incentive is to ensure that this property has "mothballed indefinitely."' And it continues on… but to complete the sentence, '… indefinitely because of our concerns about not disturbing the residual contamination,' which is I think EPA's aegis. And with an institutional control, no disturbing would take place. Again, in

a later email, November… or, excuse me, an earlier email, there's the term 'mothballed,' the intention to mothball the property.

From what I understand of EPA Policy Guidance, memoranda I've read issued by James Woolford [?], especially with a reformed EPA, and, more recent… the end goal of deleting from the National Priorities list, redeveloping, reuse… I'm sorry to get off of that again. but that's always EPA's end goal. If it's feasible, if it's possible, it's good public policy not to mothball a property for possibly hundreds of years--another term that Ms. Mescher used. Well… can't be used for any purpose for possibly hundreds of years. That's not the exact quote, but I can find it here.

Anyway, I think you get my gist. And I have it here in writing. I didn't… you know, these are the… these are the tax records that show McKesson transferring land to Ritchie. McKesson to Ritchie. Arkwood to Ritchie. Buying up land around Arkwood, and then transferring it to the employee Ritchie.

GHOSE: I would like to respond not to this at all, but you pointed out that, you know, 6 gallons

and the number was 275. That's typical of this area of any kind of stream. When the volume of water flowing is high, the amount of contaminant is low, like the when volume is like…

GRISHAM: That pattern…

GHOSE: …30 gallons per minute you have lower value. When the steam dries out, the value of the contaminant should be higher.

GRISHAM: That pattern is not in evidence here. And can I give you some more data points? Do I need to give you more…

GHOSE: No, that's…

GRISHAM: …because there are examples of low… low flow with high concentration tests, and high flows with low concentration tests, and side by side, and dates…

SANCHEZ: Let me… you know, regarding the land or the property, if you request… if you submit a request to EPA to delete the areas that do not have restrictions from the [...unintelligible...], we can do that. We will delete the… how many other acres that are in the wooded areas that were not… that do not have contamination above our restricted

land use. We can… we have under the [...unintelligible...] a partial deletion for NPL sites. So we can do that… than process. If you, you know, request that for EPA to do it, we will, and it will be done. But, again, the limitations on the other rest of the site would have to be in place until the, you know, clean-up levels are met. And even then, I mean, should responsible parties implemented a remedy, they… and they are responsible for ensuring that the remedy remains protected, they have to have a… you know, input as to what or how the property is ultimately developed because they don't want, you know, someone to just come in there and disturb the property and cause what we referred to as a 'relief [?].' In other words, you know, exposing people to the contaminations that are… remain under the cap or at the site. So it is not just… you know, even if clean-up levels are met and the site is deleted from the NPL, there are still requirements on how the property can be used because of the restrictions that is has for where the cap is in place.

GRISHAM: Of course. I mean, the owner of the Arkwood site and surrounding lands understood that. That's why the owner agreed to record the deed restriction that Don Williams drafted and provided, eliminating the possibility of any residential use on any of that land. Now, I understand that residential use may be possible for the bulk of that that's not included in the… where there's not a cap. So that's the good news.

SANCHEZ: [...unintelligible...] request the EPA to do that.

GRISHAM: But with the institutional control remaining, no residential use… we're getting into use again, I know… that…

SANCHEZ: The restriction would…

GRISHAM: I mean, it was the owner's intention to have that, the restriction against residential remain permanently. The owner, especially on the capped area, doesn't even want it, agrees that there should never be housing on that. That wouldn't be appropriate. And that's in evidence in other communications with Don Williams. So as long as that institutional control remains on the

tighter, more specific, smaller area that you're talking about, then there should be no reason to delay. Deleting the entire site from the National Priorities List as long as that institutional control remains in place and any other stipulations that EPA wants to make on the use of that property, then there wouldn't be any release, there wouldn't be any chance of release. Is that fair? I mean, that's the purpose of an institutional control is to make sure that any future use doesn't cause a re-release.

SANCHEZ: That is correct, but to delete that area that was the source of a contamination that now exists in the groundwater that is being discharged to the New Cricket Spring, the levels there need to be measured to delete the whole site from the NPL. But if you have, you know, plans for developing the rest of the site, which I believe is larger than the area that has a cap, then that part can be deleted from the NPL.

GRISHAM: For this site, though, it's… at least the possibility that the entire site could be deleted from the NPL with institutional controls in

place.

SANCHEZ: Well, once the clean-up levels are met, yes.

GRISHAM: Well, the soil clean-up is done. There is no more clean-up going on, so…

SANCHEZ: Right, now it's the groundwater.

GRISHAM: Groundwater is the only issue.

SANCHEZ: [...unintelligible...].

GHOSE: But the sinkhole area is… so basically, the capped area that's [...unintelligible...]…

GRISHAM: So even if you built a wall around the sinkhole area, which is--what?--about the size of this room, perhaps?

SANCHEZ: Yeah.

GRISHAM: A little smaller.

GHOSE: A little smaller.

GRISHAM: A little smaller than this room. You could build a wall around that sinkhole area and create an institutional control that says, 'This area shall never be entered by any human,' let's say, for exaggeration's sake, and everything else could be deleted, just an example. I mean

that small area, smaller than this room, could be… have its own institutional control that it's not good for any use whatsoever. Is that… that would seem extreme to me, but it is possible to do. Delist part of it completely?

SANCHEZ: Well, you know, building a wall in the type of subsurface environment that you have there will probably not be feasible because you would have to tie that into some kind of [...unintelligible...], you know, straight up below the ground surface, so you don't have, you know, leakage or discharges into the creek and…

GRISHAM: Yes, sir. Well, it's a hypothetical.

SANCHEZ: I'm trying to explain to you, hypothetical…

GRISHAM: I'm sorry.

SANCHEZ: …scenarios.

GRISHAM: I apologize for interrupting you. So you would need a wall and you would need control to keep it from leaking into surrounding areas, which at this point is New Cricket Spring, is that right?

SANCHEZ: If you're asking the question, yes.

GRISHAM: Okay, I'll just make this my last thing. I appreciate your patience. I…

SANCHEZ: Sure. No, we're here to try to, you know, respond or address concerns that you have for the site with… you know, if you don't know something or understand something, that's part of our job, to respond [...unintelligible...].

GRISHAM: Thank you, sir. This goes back to water quality standards. So since Sarah Clem is back here, if we could go back to water for a second, please, and then I think we're done. This is EPA Re-Registration Eligibility Decision for Pentachlorophenol. This was issued… this was signed by Frank T. Sanders, Director, Antimicrobials Division, September 25, 2008. It's the Re-Registration Eligibility Decision for Pentachlorophenol, List B, Case 2505. And I want to turn here to the section called… well, it's Part 2, Chemical Overview, skipping to… it's (A) Regulatory History, Part 4, Dietary Exposure and Risk from Food and Drinking Water. It's EPA's own research. Section (A), Dietary & Drinking Water.

There's discussion of what dietary risks… it starts off: 'Dietary risk is characterized in terms of population-adjusted dose, PAD…' and it's technical. I'll skip over to the part that I consider relevant: '(B) Pentachlorophenol.' Again, some preparatory material in this section--'Typically, a dietary risk assessment would not be necessary for pentachlorophenol based on the current restrictions on use of this pesticide.' That had been in place since 1984. And it goes on. Well, I think I'll just read this into the record, please. 'However, monitoring data from FDA from 1991 showed levels of pentachlorophenol in only a few food items and at levels that approached the limit of detection,' pointing out that in your tests… Arkansas water quality standard is 9.7. I'm off the page now… and below… it's 9.7 parts per billion, 5 parts per billion and below is non-detectable, so 5…

SANCHEZ: 5 is the water… drinking water standards, 5 parts per billion.

GRISHAM: No, that's not correct. I'm talking about this non-detectable in the… in the laboratory testing for New Cricket Spring. 9 is the Arkansas

standard. Below 5, it's not even detectable. I'm saying it's very close to the level of non-detectability, the Arkansas standard. My point here is that the Arkansas standard is extremely stringent, and I think unreasonably so. And if you bear with me for a moment, I'll read this out.

So picking back up with the document, I was describing before, I had said, repeating the same sentence, 'However, monitoring data from FDA from 1991 showed levels of pentachlorophenol in only a few food items and at levels that approached the limit of detection.' So continuing with the quote from there. 'Therefore, the Agency conducted a dietary assessment based on available monitoring data using conservative assumptions, and the dietary monitoring data collected when pentachlorophenol was still present in certain foods in 1991. Exposure to pentachlorophenol through food, based on FDA monitoring data represents 2.4% of the chronic RFD, technical, for the most exposed sub-population of the U.S., children ages 1 through 6. Exposure to all other groups represents less than 0.5% of the chronic

RFD.' That's the technical prepatory material.

The real heart of this… and if you'll bear with me just a little longer, I will just read into this, and then just offer this for your consideration. Comparing it to 9.7 parts per billion, 'b' as in boy, here's what the EPA signed off in 2008: 'Surface water runoff from pentachlorophenol-treated utility poles may be a possible source for pentachlorophenol or its transformation products in drinking water or in foods. Estimated Environmental Concentrations (EECs) for surface water have been calculated by the Agency. Drinking water levels of concern (DWLOCs) for acute and chronic dietary risk from drinking water were calculated. DWLOCs calculated for surface water for pentachlorophenol were 10,465 parts per billion for adult males and females, 2,990 parts per billion for children ages 1 through 6.' And it continues with more technical language using the acronym, PRZM-Exams Model, and so forth… technical.

The heart of that for me is 10,465 parts per billion. If I understand this rather technical

document correctly, again, drinking water levels of concern, calculated by the Agency for acute and chronic dietary risk from drinking water were calculated. DWLOCs calculated for surface water for pentachlorophenol with 10,465 parts per billion. It seems like a huge disparity between that and the 9.7 near detectable… near the limits of the tests that even detect for the substance. And that's… that's really central to my concern, my feeling that the Arkansas standards, however they were derived in 1998, are excessively stringent and place an undue burden on the owners of the Arkwood site, and I…

So if you saw my draft letter to the Director of the Arkansas Department of Environmental Quality, you know, that was… it was… it was forwarded to Mr. Williams. It was actually… I created it at Mark Drowen's suggestion. He suggested that I write to create some marks and… when I mentioned that Don Williams, he asked me to present that to Mr. Sanchez--I think you got it--and to Ms. Hyman. So I guess they chose not to circulate it, but it was meant to be the framework

for this meeting. I think it's where, eventually, the agenda items came. My request in that letter was to… is just to review that standard to see if it's not… in light of this data where pentachlorophenol is… is approved for use.

Wood is being treated with pentachlorophenol, as we speak, with EPA approval. No doubt there are many restrictions, controls, permits that are involved in any plants that use that, but there's… this document talks about a huge benefit to society of the use of pentachlorophenol. And the Agency has done the calculation. If I understand correctly, chronic and acute dietary risk from drinking water, 10,400-and-some-odd parts per billion. I could drink it every day and without… according to the EPA, they're being a drinking water level of concern, without exceeding the EPAs drinking water level of concern for acute or chronic dietary risk--10,465 parts per billion versus the Arkansas standard codified in Mr. Arjmandi's letter of 1998, of 9.7 parts per billion.

CLEM: One thing that… you're referring to

human intake of the contaminant, and the criteria, the most protective criteria for the stream is the aquatic life use. So the most protective is making sure that the aquatic life in the stream are not affected by contaminants. So the number in the formula that is in Reg 2, the 245OA, is protective of aquatic life.

GRISHAM: Okay.

CLEM: So just like, for example, an adult can have a certain content… take in a certain amount of alcohol, for example, you can take… we can probably take in a larger amount of alcohol than a child could. It would take less of alcohol… less alcohol to affect a child than with it would us. Organisms are more sensitive… aquatic organisms are more sensitive to concentrations of certain contaminants, and that is the case with pentachlorophenol. It takes less of the concentration of the pentachlorophenol to produce an effect than it would, for example, our intake of pentachlorophenol.

GRISHAM: Okay.

CLEM: So in the [...unintelligible...],

they’re in aquatic environment, so there’s solubility issues and physics going on there, as well. But… so that’s… and what you’re describing, that’s a… that’s the major difference in what you’ve presented than what’s in the criteria. That’s just the aquatic… this is [...unintelligible...] for aquatic life.

GRISHAM: And that’s aquatic life in the spring or in receiving waters of the nearby creek where the spring flows into the creek?

CLEM: Both. Again, the variable is… the only variable is pH here as it relates to this contaminant.

GRISHAM: Okay. So it doesn’t matter if… what aquatic life is there, if any aquatic life at all has been identified in the spring, it’s… it’s… it remains the same, no variable.

CLEM: So… and to that, every stream in the state has certain uses. We’re required, the State of Arkansas, really the EPA is required to designate certain uses, and then they’re required to develop criteria to protect those uses. One of those uses is, and the most protected use of any

stream in the United States, is aquatic life. And so that's a… that's a base, that's the most protected use. And so that's where that comes from. Does that make sense?

GRISHAM: That does, thank you. That clarifies a lot. Are there other instances in the State of Arkansas of pentachlorophenol, to your knowledge, PCP being regulated in this way or being controlled? Are there other permits in Arkansas for the discharge of concentrations of PCP into the… into any water body in Arkansas.

CLEM: I don't have any knowledge of that. Our… the permitting section… we have like 6,000 permits, and so… I think [...unintelligible...] into the permit section to answer that question. I don't know.

GRISHAM: And with reference to Mr. Arjmandi's letter that sets the state standard for New Cricket Spring, it's set… the standard would be set on an individual basis as each… if there are any other… or for other substances, for that matter, in each permitting process there's the same kind of calculation, not just the formula in Regulation 2,

but also other factors that we discussed earlier that are taken into consideration in arriving at a determination letter such as Mr. Arjmandi's setting those hard numbers. That's done each time the permitting process is gone through, no matter what.

So, for example, if there's another source of pentachlorophenol contamination in the state, let's say, a wood treating plant, they might have a different letter with a different standard allowing them, perhaps, to… or holding them to more or less stringent standards than the Arjmandi letter of 1998? It could vary.

CLEM: The standard always stays the same. The standard is the… the standard is the formula [...unintelligible...]. Permit limitations are given to… for each stream to protect based on that formula.

GRISHAM: Based on this formula and other factors that you talked about that were not specified.

CLEM: The standard always stays the same, and the process by which a limitation is given to a facility or permitee always stays the same, unless

there's some type of… unless there's some type of change in that policy or change in that process which EPA has to approve. I want to draw… I want to draw a flow diagram. [...unintelligible...], but…

GRISHAM: Yeah, me too.

CLEM: I understand… I understand it's confusing, but… these formula never… never change, correct. And the process by which a limitation… a limitation of what you see here and… in Masoud's letter as given always stays the same unless an EPA… unless a change is done to the CPP which EPA always approves… they always approve our process by which we carry out developing our limitations… not these folks. It would be the water folks in EPA [...unintelligible...]. Does that make sense?

GRISHAM: It does. Thank you.

CLEM: Okay.

GRISHAM: So the standard in Mr. Arjmandi's letter could change? Could it be… could… it that something that can be reviewed? I mean, that's what I'm asking Ms. Marks to do in my draft letter, which I thought would be the basis… I thought was

the basis for the agenda of the meeting, but that's the essence of the letter that Mark Drowen suggested I write, was can this particular water standard from New Cricket Spring be reviewed? I understand that, you know, the drinking water data and the toxicity for humans may be very different than for fish or aquatic life, but is there a process whereby a member of the public can petition to have the water standard reviewed and changed? I noticed at the back of Regulation 2 there's something about third-party rulemaking, there's some addenda, there's a few different corporations who have applied for and gotten modifications to Regulation 2 for specific water bodies, maybe even just part of a water body from this point to this point. And what is… what is that… is that a process that would apply here?

CLEM: You could follow that… you could follow that process, the third-party rulemaking process, to change the standard in Regulation Number 2. The Board can do that. It's an extensive process, a very extensive process. And as it relates to toxic substances it's very difficult, it would be very

difficult. I'm not saying the process couldn't be carried out. It can, but as it relates to toxic substances it's very difficult, and that's based on experience.

But getting back to I think your request and review, this is the first time I've ever been a part of one these, the Five-Year Review process [...unintelligible...] for one of these sites, but it is the stated… the limitations that was developed for the [...unintelligible...] is part of the review process, and so… as I was saying, if there had been exact calculations… I don't know what… I don't know the exact calculations that were done to… and that would have been very nice to have for us to retain but the… that developed these numbers that Masoud has in this letter. I don't know exactly what those are, but I will say based on… we'll move forward in the most appropriate way to develop these numbers for pentachlorophenol that should be in the Five-Year Review, the most current process, CPP that we have. I don't… I don't know under what… I don't know that the CPP… what the CPP is like, if the calculations that are required are

the same now as they were in 1998. But the process will be… the most recent CPP will be used if appropriate to develop the numbers that would be… that are most appropriate currently. Does that make sense?

GRISHAM: Okay. Yeah, I mean, that's good news, because it means that that standard…

CLEM: It will be… it will be reviewed.

GRISHAM: It's going to be reviewed. It's subject to change pending the third Five-Year Review. The Department could decide to change that, make it more stringent or less stringent during this process. I didn't know that. I thought it was set in stone in 1998 and…

CLEM: Oh, no, we're always… I mean, even in our EPS [?] permitting process every five years a…t those 6,000 permits I was talking about… has to be renewed, and they're reviewed thoroughly, so…

GRISHAM: And this is a small thing, but it just occurred to me in Mr. Arjmandi's letter it also talks about the pH of the water has to be between 6 and 9 as it comes out, and I don't see where that's ever been tested. Is that part of the

routine testing of the water there, the pH?

KILBURN: I don't know that it is currently, but that… as part of the Five-Year Review process, that's something that we are looking at and will be discussing in comments on the Five-Year Review with EPA.

GRISHAM: Okay. That's all I have. And I appreciate your time. Thanks for your patience.

SANCHEZ: And that is the purpose of the Five-Year Reviews, to observe the remedy that's in place and to determine if it still protective or is there changes that need to be made, so that the remedy will remain protective in the future. And at the Five-Year Review, that's when we can, you know, make changes to the remedy or clean-up level, or if more stringent levels were developed from the previous Five-Year Review that's the time that we can, you know, either, you know, make a change or, you know, continue as conditions are right now.

GRISHAM: I appreciate that. I guess that was the concern is that in previous Five-Year Reviews, it seemed to be simply a matter of just maintain the status quo and there didn't seem to be any

critical analysis of the… of the remedy that was in place or the plan that was in place or the testing methodologies that were I place. You know, I… it would seem like a worthwhile test to stop the… injecting the water into the sinkhole, which is an unnatural process to see what would happen naturally to the… it's mentioned in… I believe in previous EPA communications, if not the previous Five-Year Reviews, that natural attenuation accounts for a lot of the lowering of that number.

SANCHEZ: I mean, typically, the reason those, you know, wells are used for injection of water or for reagents or something, especially in this type of environment is to flush-out the contaminant and raise the clean-up levels faster than you would under normal processes, where it's just basically having a trickle and your levels will remain high for 2-, 300 years, where you can go in there and flush your subsurface, you know, formation and clean it up in, you know, 5-, 10 years or, you know, a very short period of time. So that to me, was the intent of putting those injection wells out there. I mean, they can stop, but your levels, you

know, are not going to attenuate faster just from getting, you know, your normal rainfall that occurs in that area that slowly trickles down to your subsurface and your, you know, underground formation, and basically cleans it out by natural attenuation that are the natural processes that take place. So, if anything, that process should, you know, expedite [...unintelligible...] levels.

GRISHAM: I understand it. I seem to recall some discussion of that acceleration of the clean-up facilitated by the injection wells having plateaued or having… it's no longer accelerating. It seems to have flattened-out, the rate of acceleration. So that might be a reason to stop injecting on the site and see what happens at the mouth of the spring, and see what happens with the levels, if they'll come down to below even the current water standards.

KRESSE: If I can interject here just for a second.

SANCHEZ: Okay.

KRESSE: There is… now EPA has an accepted remedial plan that includes MNA, Monitored Natural

Attenuation. So that is something that the Department will entertain. It takes a lot of monitoring. One thing, they do apply and commonly with organics, and I've done it with pesticides, is that you will see a… what you're speaking about, a natural attenuation over time. You can even plot it out and you can do it.

This is a semi-logged plot of all the concentrations that are… I just cranked this out this morning. If you remove what was happening when they were doing it, when you do this by a semi-log you would see this is the natural attenuation. You can follow this out to time and people use this to predict how much time it would take to meet some goal. So let's say the goal is down here. You can put this line across here as your goal. Maybe that's 9 micrograms per liter, whatever that might be. You can plot this line out and say it'll be at that goal in 2050, I don't know. So you could do that.

So I can show you that your early part indicates where my natural attenuation without doing anything might go. So just a… in 2005

somewhere they were doing something and it looks like they steepen that part of the curve.

GRISHAM: Well, the injection started in…

KRESSE: Or whenever it happened.

GRISHAM: Yeah, okay.

GHOSE: Yeah, basically, you know, they have tried different things. But in the Five-Year Review [...unintelligible...] I have been [...unintelligible...] plot and it looks like if we look at the extrapolation, it looks like we are going to reach the standards in probably a couple of years.

KRESSE: Possibly. And then some of that depends on the variation, and that's what you spoke to earlier. We don't have a point-for-point. There's lots of variation, and some of that is in lab analysis and some of that is a character of organics of NAPLs in a water environment, solutions that do not mix with water, as they say, oil and water don't mix. So some of that is where these globules will disassociate from… maybe they're in a little vine or a fracture and they come out, so you see spikes. And when you're talking about a spike

in 2005, you really don't see it here. On the overall variation, it's probably within the variation. That looks a little anomalous, you know, but… and what that causes… believe me, as scientists we rip our hair out trying to think why'd you have one little number that was higher. But for the most part, the number you gave was within the variation. So there's variation in all components of this system.

So just to help you with the science of it, you can talk about natural attenuation. If they never did anything, if they let us go for years, we could, over time, if you have enough data, you can… maybe something will happen, but these tend to follow trends and we use these first order decay rates, will call them, to predict. You can use them for predicting distances that it will travel, and you can also, in this case, use them for time, for predicting time. And then we can say, 'Well…' you know, especially on the site. A lot of this is done on Cricket Springs off the site, but on the site sometimes they use that to say, 'Well, will the contaminant plume stay on the site and… to

where we can just monitor it, and…' as long as it doesn't affect an outside owner or something else.' So all these types of scenarios.

But I just wanted to show you what appears to be happening with natural attenuation. You can draw that line on out for some time and they could be…

GRISHAM: And it would stay on the same…

KRESSE: It would tend to stay on the same slope over time.

GRISHAM: And that anomalous data point, because I did have a… It's fairly recent. It was the highest ever… and would that…

KRESSE: It's hard to say what caused it.

GRISHAM: I mean, could it be the testing methodology?

KRESSE: It's hard to say. There can be times where the labs of organics there can be contamination in the line or something else.

GRISHAM: Is there a… do you have any idea about margin of error for this kind of testing in such a minute quantity, minute concentrations? Is there… there's some margin of error, I guess.

KRESSE: Between all the labs.

GRISHAM: With all lab.

KRESSE: That's right. They can tell you what their accuracy for any kind of constituent they run, usually much lower with inorganic parameters, and organics are a little trickier.

GRISHAM: And is pH a variable that has to be controlled for within the testing methodology, as well, for this substance? No, it's…

SANCHEZ: The pH that you're referring to is what they use for [...unintelligible...], levels?

GRISHAM: I see. I appreciate that. I appreciate you all. Thanks for your time.

KILBURN: All right, anything else?

GRISHAM: No, ma'am.

KILBURN: All right, I guess we're done. Thank you, Jean.